

CLAIMS

I CLAIM:

1. A plurality of micron-size solid particles, comprising at least one polyamide compound, wherein the particles comprise a diameter in the range of about 1 micron
5 to about 1000 microns, and wherein at least some of the plurality of particles are substantially transparent.
2. The plurality of particles of claim 1, wherein the at least one polyamide compound comprises a –CONH functional group.
3. The plurality of particles of claim 2, wherein the at least one polyamide compound
10 comprises a nylon compound.
4. The plurality of particles of claim 3, wherein the nylon compound comprises nylon 6.
5. The plurality of particles of claim 1, wherein the particles comprise a diameter of less than about 200 microns.
- 15 6. The plurality of particles of claim 1, wherein at least about 40% of the particles are substantially transparent.
7. The plurality of particles of claim 6, wherein at least about 60% of the particles are substantially transparent.
8. The plurality of particles of claim 7, wherein at least about 80% of the particles are
20 substantially transparent.
9. The plurality of particles of claim 1, wherein at least some of the transparent particles comprise at least one inert nucleating particle.
10. The plurality of particles of claim 9, wherein the at least one inert particle comprises at least one alumina-silicate compound.

11. The plurality of particles of claim 9, wherein the at least one inert particle comprises at least one color pigment.

12. A method of forming a plurality of micron-size particles, comprising:

introducing at least one amide-based compound having a melting point, at least one
5 suspending agent and at least one surfactant into a reaction vessel to form a reaction mixture;

applying a thermal energy to the reaction mixture, wherein the thermal energy comprises a temperature that is at or above the melting point of the at least one amide-based compound;

10 polymerizing the at least one amide-based compound in the reaction mixture;

cooling the reaction mixture; and

rinsing the reaction mixture to retrieve the polymer particles.

13. The method of claim 12, wherein the reaction mixture is made substantially free of moisture before the thermal energy is applied.

15 14. The method of claim 12, wherein polymerizing the at least one amide comprises introducing at least one alkylating agent.

15. The method of claim 14, wherein polymerizing the at least one amide further comprises introducing at least one activator.

16. The method of claim 14, wherein the at least one alkylating agent comprises sodium
20 hydride.

17. The method of claim 15, wherein the at least one activator comprises a polyisocyanate compound.

18. The method of claim 12, wherein rinsing the reaction mixture comprises water.

19. The method of claim 12, wherein introducing further comprises introducing at least one nucleating agent.
20. The method of claim 19, wherein the nucleating agent comprises at least one inert particle.
- 5 21. The method of claim 20, wherein the inert particle comprises an alumina-silicate compound.
22. The method of claim 20, wherein in the inert particle comprises at least one color pigment.
23. A polymer particle formed using the method of claim 12.
- 10 24. A polymer particle formed using the method of claim 14.
25. A polymer particle formed using the method of claim 15.
26. A polymer particle formed using the method of claim 19.
27. A plurality of micron-size solid particles, comprising at least one polyamide compound, wherein the particles comprise a diameter of less than about 4 microns.
- 15 28. The plurality of particles of claim 27, wherein the at least one polyamide compound comprises a –CONH functional group.
29. The plurality of particles of claim 28, wherein the at least one polyamide compound comprises a nylon compound.
30. The plurality of particles of claim 29, wherein the nylon compound comprises nylon
20 6.
31. The plurality of particles of claim 27, wherein the particles comprise a diameter of less than about 2 microns.
32. The plurality of particles of claim 27, wherein at least about 40% of the particles are substantially transparent.

33. The plurality of particles of claim 32, wherein at least about 60% of the particles are substantially transparent.
34. The plurality of particles of claim 33, wherein at least about 80% of the particles are substantially transparent.
- 5 35. The plurality of particles of claim 27, wherein at least some of the transparent particles comprise at least one inert nucleating particle.
36. The plurality of particles of claim 35, wherein the at least one inert particle comprises at least one alumina-silicate compound.
37. The plurality of particles of claim 35, wherein the at least one inert particle
10 comprises at least one color pigment.